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Inside this issue:

Components of Influenza Surveillance in the U.S.	2
Summary of the 06-07 Flu Season	3
Influenza Associated Pediatric Mortality	4
Select Notifiable Conditions Reported in 2006 and Jan—Jun 2007	5
Public Health Information Network	6
Region 7 Outbreaks, Clusters and Other Large Investigations; July to Sept 2007	6

Seasonal Influenza Surveillance Has Started

Seasonal influenza started at the beginning of October and will continue through next May. This issue of the Region 7 Epidemiology and Surveillance Quarterly Newsletter has many articles focusing on influenza surveillance including an overview of seasonal influenza surveillance in Region 7, an overview of national influenza surveillance systems, highlights from last year's influenza season and information on pediatric influenza mortality reporting.



Prevent the Flu:

Wash your Hands

Cover your Cough



Overview of Seasonal Influenza Surveillance

DSHS Health Service Region 7 conducts seasonal influenza surveillance by reporting the estimated level of influenza activity to the Infectious Disease Control Unit (IDCU) of DSHS every week during flu season. HSR 7 is able to do this through weekly reports received from an average of 65 reporters for the 30 counties it covers. These reporters include local health departments, clinics, hospitals, schools and Region 7 field offices.

Using the reports from all 11 public health service regions, IDCU provides a report to the Centers for Disease Control and Prevention (CDC) every week. Reports indicate the influenza activity levels which are defined as no activity, sporadic, local, regional, or widespread.

IDCU, in cooperation with the DSHS Medical Virology Laboratory, monitors influenza virus cultures down around the state. Texas currently has culture surveillance sites in Amarillo, Austin, Corpus Christi, Dallas, El Paso, Fort Worth, Galveston, Laredo, Lubbock, San Antonio, Tyler, and Wichita Falls, whose health care providers collect and submit viral cultures to the DSHS lab on a weekly basis during flu season. There is also the CDC-sponsored Sentinel Physician Surveillance Network (SPSN) in Texas that has over 45 providers who voluntarily report outpatient influenza-like illness by age group to the CDC on a weekly basis, and some providers submit cultures to the DSHS lab. Other laboratories, regional and local health departments, facilities participating in influenza research, and private physicians around the state also participate in flu surveillance. It is through these efforts of health care providers and laboratories in Texas and all other states, that the CDC develops a national picture of influenza virus activity, the geographic distribution of influenza viruses, and the clinical impact of the circulating viruses.

This surveillance system allows public health to (1) Find out when and where influenza activity is occurring, (2) Determine what type of influenza viruses are circulating, (3) Detect changes in the influenza viruses, (4) Track influenza-related illness and (5) Measure the impact influenza is having on deaths in the United States.

Additional information on influenza surveillance systems in the United States can be found on page 2.

Components of Influenza Surveillance in the United States

Although most of you are aware of seasonal influenza reporting, the U.S. influenza surveillance system actually has seven different components, including four that report year round. The seven components are:

1. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) Collaborating Laboratories – About 80 WHO and 50 NREVSS labs in the U.S. report the total number of respiratory specimens tested and the number positive for Flu A and B each week. Most of the WHO Labs also report the influenza A subtype and ages of persons tested. Some of the influenza viruses collected by labs are sent to the CDC for more testing. *This is Year-Round Surveillance.*
2. U.S. Influenza Sentinel Providers Surveillance Network – Each week approximately 1,200 healthcare providers report ILI by age group. The percentage of patient visits reported each week is weighted on the basis of the state population. This percentage is compared weekly with the national baseline of 2.1%. The baseline is the mean percentage of patient visits for ILI during non-influenza weeks for the previous three seasons plus two deviations. (Non-influenza weeks are defined as weeks in which the percentage of specimens tested for influenza that are positive is less than 10%). *This is Year-Round Surveillance.*
3. 122 Cities Mortality Reporting System – Each week the vital statistic offices of 122 cities report the total number of death certificates received and the number of those for which pneumonia or influenza was listed as the underlying or as a contributing cause of death by age group. The percentage of all deaths due to pneumonia and influenza are compared with a seasonal baseline and epidemic threshold value calculated for each week. *This is Year-Round Surveillance.*
4. State and Territorial Epidemiologists' reports – State health departments report the estimated level of influenza activity. *This is seasonal surveillance.*
5. Influenza-associated pediatric mortality – Influenza-associated pediatric mortality is a nationally notifiable condition (for children less than 18 years old). *This is Year-Round Surveillance.*
6. Emerging Infection Program (EIP) – The EIP Influenza Project conduct surveillance for laboratory-confirmed influenza related hospitalizations in persons less than 18 years of age in over 60 counties covering 12 metropolitan areas of 10 states. *This is seasonal surveillance.*
7. New vaccine Surveillance Network (NVSN) – The NVSN provides population-based estimates of laboratory-confirmed influenza hospitalization rates for children less than 5 years old residing in three counties: Hamilton County OH, Davidson County TN and Monroe County NY. Children admitted to NVSN hospitals with fever or respiratory symptoms are prospectively enrolled and respiratory samples are collected and tested by viral culture and RT-PCR. NVSN estimated rates are reported very two weeks during the influenza season. *This is seasonal surveillance.*

Together, the seven influenza surveillance components are designed to provide a national picture of influenza activity. Pneumonia and influenza mortality is reported on a national level only. Sentinel provider and laboratory data are reported on a national level and by influenza surveillance region. The state and territorial epidemiologists' reports of influenza activity are the only state-level information reported. Both the EIP and NVSN data provide population-based, laboratory-confirmed estimates of influenza-related pediatric hospitalizations but are reported from limited geographic areas.

It is Important to Remember the Following about Influenza Surveillance in the United States:

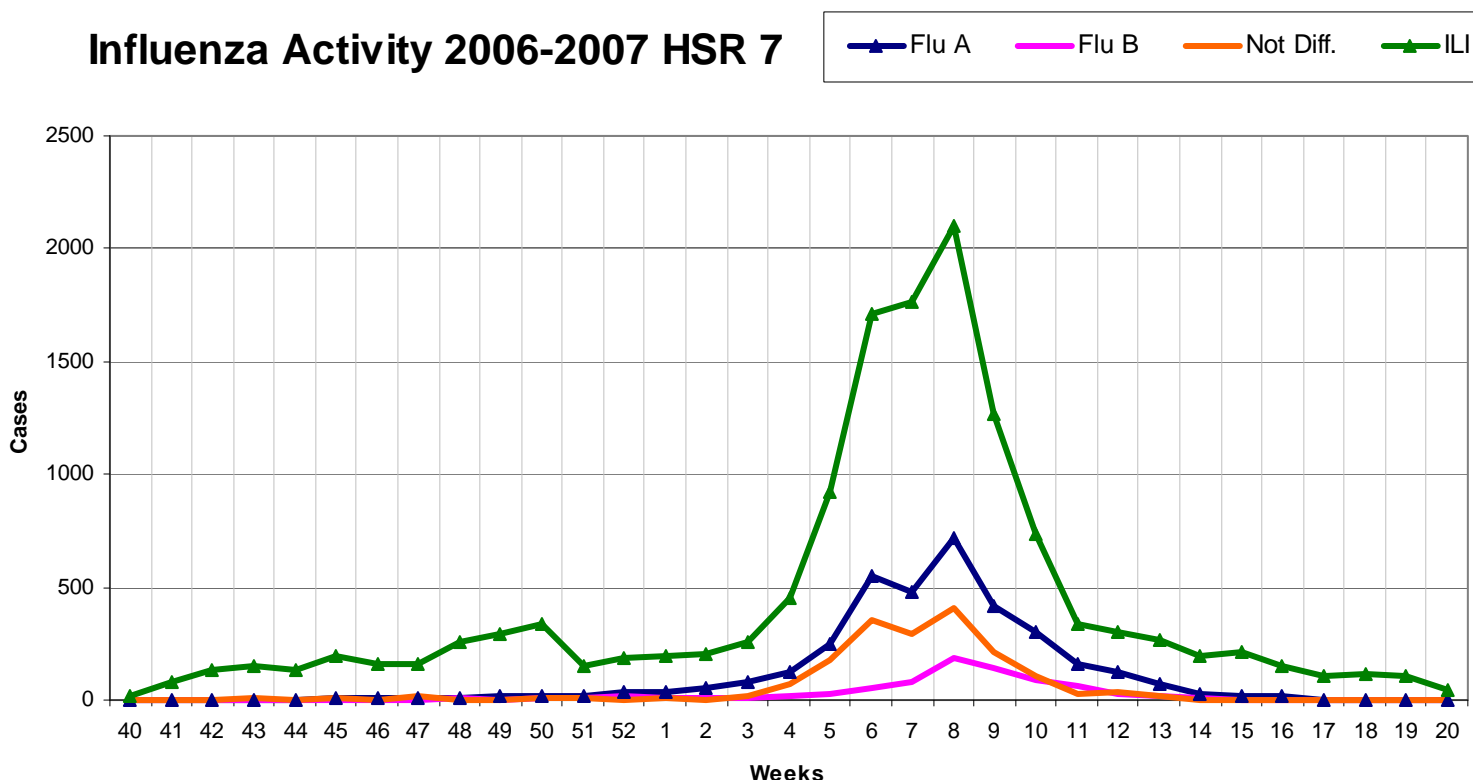
- All influenza activity reporting by states and health-care providers is voluntary.
- The reported information answers the questions of where, when, and what influenza viruses are circulating. It can be used to determine if influenza activity is increasing or decreasing, but cannot be used to ascertain how many people have become ill with influenza during the influenza season.
- The system consists of seven complementary surveillance components. These components include reports from more than 120 laboratories, 2,000 sentinel health care providers, vital statistics offices in 122 cities, research and health-care personnel at the NVSN and EIP sites, and influenza surveillance coordinators and state epidemiologists from all 50 state health departments, and the New York City and District of Columbia health departments.
- Influenza surveillance data collection is based on a reporting week that starts on Sunday and ends on Saturday of each week. Each surveillance participant is requested to summarize weekly data and submit it to CDC by Tuesday afternoon of the following week. Those data are then downloaded, compiled, and analyzed at CDC. Reports are available on the CDC Web Site (<http://www.cdc.gov/flu/weekly/fluactivity.htm>)

Summary of the 06-07 Influenza Season in Region 7

Traditionally seasonal influenza surveillance in the United States starts at the beginning of October and runs through May. This time period captures the months when most, but not all influenza activity occurs. Here are some facts about the 2006-2007 influenza season:

- Influenza reports in Region 7 peaked between weeks 6 (week ending 02/10/07) and 8 (week ending 02/24/07).
- Both Flu A and Flu B were circulating in the Region.
- Last season's vaccine provided good coverage against influenza.
- 77 providers participated in the Region 7 seasonal influenza surveillance, 19 of whom reported at least 75% of the weeks.
- 5 providers reported 100% of the weeks.
- It was not too late to get your flu vaccination in January.

Influenza Activity 2006-2007 HSR 7



Notes:

Flu cases are determined by positive rapid tests, cultures, antigen tests and/or polymerase chain reaction (PCR).

Not Diff - includes flu tests that do not differentiate between influenza A, influenza B or influenza C.

ILI - includes reports of influenza-like-illness. Influenza-like-illness is defined as a fever over 100°F with cough and/or sore throat.

Additional information on influenza in Texas can be accessed at <http://www.dshs.state.tx.us/idcu/disease/influenza/>.

Influenza Associated Pediatric Mortality

There are several myths surrounding influenza. Some people believe that only the elderly or people with obvious chronic health conditions are at risk of getting severe illness from influenza. However, each year we are reminded that this is not always the case. During the 2006-2007 influenza season, 74 pediatric deaths through out the United States were reported to the Centers of Disease Control and Prevention. Eleven of these deaths occurred in Texas with one occurring in Region 7. The graph below shows the distribution of the deaths in the United States and in Texas.

Influenza associated pediatric mortality is a nationally notifiable condition. Influenza associated pediatric mortality is defined as a death resulting from a clinically compatible illness that was confirmed to be influenza by an appropriate laboratory or rapid diagnostic test in a person under 18 years of age. Influenza illness followed by full recovery to baseline health prior to death should not be reported as an influenza associated pediatric death.

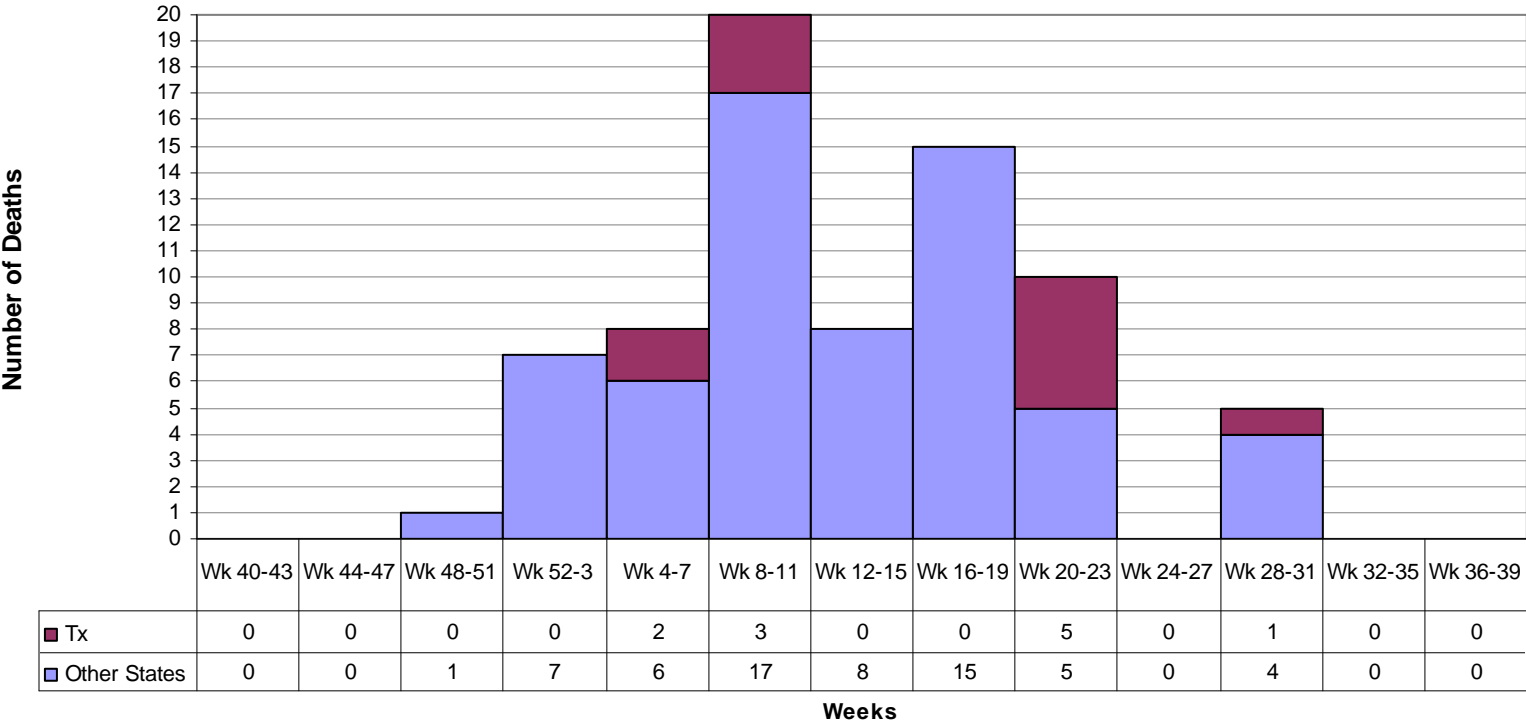
All cases that fit this criteria should be reported to the health department within one working day of identification.

Your local or regional health department will track the number of reports being received locally and will forward reports to the Department of State Health Services central office which will in turn share the reports with the Centers for Disease Control and Prevention. A report form for influenza associated pediatric mortality can be found at <http://www.dshs.state.tx.us/idcu/investigation/forms/PedFlu.pdf>.

During the 2006-2007 influenza season, Texas led the nation in pediatric deaths related to Influenza.

There were 74 total pediatric deaths - 11 (14.86%) of which occurred in Texas

Influenza Related Pediatric Mortality in the US: Flu Season 2006-2007



Select Notifiable Conditions Reported in 2006 and January to September 2007

Notifiable Condition	2006 Count*	2007 YTD Count*
Amebiasis	30	41
Aseptic meningitis	270	229
Bacterial meningitis, other	18	12
Brucellosis	2	4
Campylobacteriosis	146	236
Cruetzfeldt-Jakob Disease	2	0
Cryptosporidiosis	109	26
Cyclosporiasis	1	0
Dengue Fever	2	4
Ehrlichiosis, Human monocytic	1	0
Enterohemorrhagic <i>E.coli</i> /O157:H7	9	0
Enterohemorrhagic <i>E.coli</i> , shiga + (not serogrouped or non-O15:H7 serogroup))	10	7
Group A Streptococcus, invasive	57	35
Group B Streptococcus, invasive	76	43
<i>Haemophilus influenzae</i> , invasive	1	0
Hepatitis, unspecified	75	22
Hepatitis A, acute	23	19
Hepatitis B Viral Infection, Perinatal ~	0	1
Hepatitis B virus infection, Chronic^	241	172
Hepatitis B, acute	55	54
Hepatitis C Virus Infection, chronic or resolved^	2025	986
Hepatitis C, acute	3	11
Hepatitis E, acute	0	1
Legionellosis	8	4
Leishmaniasis~	0	2
Listeriosis	1	2
Lyme disease	5	9
Malaria	9	13
Mumps	15	1
<i>Neisseria meningitidis</i> , invasive (Meningococcal disease)	7	5
Pertussis	337	216
Plague	1	0
Q fever	3	4
Rocky Mountain spotted fever	2	4
Salmonellosis	366	264
Shigellosis	388	208
<i>Streptococcus pneumoniae</i> , invasive	130	144
Streptococcus, other, invasive, beta-hem (non-A nonB)^	15	10
Typhoid fever (<i>Salmonella typhi</i>)	0	1
Typhus fever	0	1
Vancomycin-Resistant Enterococcus	5	5
Varicella (Chickenpox)	1728	863
Vibriosis	12	3
Yersiniosis	3	3
Grand Total	6191	2515

Includes confirmed and probable notifiable conditions reported to the Texas Department of State Health Services Region 7 that are tracked in the NEDSS database. Year to Date (YTD) for 2007 includes cases reported and entered from January 2007 through September 2007.

* Data is provisional and may change as investigations are completed or updated.

^ Disease is not reportable. Note: Newly reported chronic Hepatitis C was taken off of the notifiable conditions list as of June 5, 2007.

~ Disease was added to the notifiable conditions list in 2007.

Public Health Information Network (PHIN)

Between July and September, 5 PHIN messages were sent out to physicians, nurses and area hospitals in Region 7 counties. These messages contained information from the Centers for Disease Control and Prevention and/or the Texas Department of State Health Services regarding ongoing health investigations with the potential to impact Texans. The PHIN provides a secure format for sharing critical health information that may contain sensitive health information. PHIN messages are sent by email, phone or fax depending on the importance or time sensitive nature of the message.

Didn't get the alerts?

Healthcare providers, school officials, emergency medical services and emergency management coordinators are eligible for PHIN access. Go to <https://texphin.dshs.state.tx.us/> to sign up to use the PHIN. In addition to getting critical health information from the Department of State Health Services, PHIN users can also assess the New England Journal of Medicine through the PHIN web portal. If you have any questions about the PHIN, call 254-778-6744 and ask to speak with Carol Davis or Russ Jones.

Region 7 Outbreaks, Clusters and Other Large Investigations; July — Sept 2007

During this past quarter, Region 7 has worked on a number of large investigations.

In September, Meningococcal Meningitis was reported in two Texas A&M students. Two cases of *Neisseria meningitidis* in the same time period among a defined group is concerning as it points to a possible strain with a virulence factor that is novel to the affected population - i.e., possibility of an outbreak. Investigation by the Brazos County Department of Health and Texas A&M University found that the two students were friends. Prophylaxis was provided to students by Texas A&M University. No additional cases were identified. Furthermore, the strain of *Neisseria meningitidis* was one covered by the current recommended meningococcal vaccine. More information can be found at www.immunizetexas.org.

In August a primary amebic meningoencephalitis (PAM) case was confirmed in a boy from Travis county. His exposure was most likely happened while swimming at a summer camp on Lake LBJ. A second case of PAM was identified in a young man from the Panhandle region of Texas. This case also reported spending time on Lake LBJ prior to onset of symptoms. PAM is a rare infection. The causative agent, *Naegleria fowleri*, is associated with warm bodies of fresh water. According to the Centers for Disease Control and Prevention, infection is most likely to occur in dry summer months when the air temperature is hot, the water is warm and water levels are low. Risk of infection can be reduced by ensuring that water does not enter the nose when participating in recreational water activities (i.e. wearing nose plug or holding your nose closed.)

In October, we received reports of viral meningitis in 6 children from Llano County. The children ranged in age from 2.5 months to 12 years. At least one of the children had a positive culture for an enterovirus. Enterovirus outbreaks do occur in the fall and can present a couple of different ways - either as a gastro-intestinal illness, or as a cold. The virus is easily transmitted person to person either from respiratory secretions going hand to hand for cold like presentation or the fecal oral route for the gastro-intestinal presentation. Many individuals who are infected will have minor to no symptoms.

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